Land Optimization as a Surviving Strategy of Farmers Family in Narrow Lands

by Rina Nuryati

Submission date: 15-Mar-2021 09:51PM (UTC-0700)
Submission ID: 1534300728
File name: on_as_a_Surviving_Strategy_of_Farmers_Family_in_Narrow_Lands.pdf (601.98K)
Word count: 5672
Character count: 31869

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

Land Optimization as a Surviving Strategy of Farmers Family in Narrow Lands

Rina Nuryati[1)], Faqihuddin[2)], Cici Aulia Permata Bunda[3)]
[1,2,3)]Department of Agribussines, Faculty of Agriculture, Universitas Siliwangi, Indonesia
e-mail: rinanuryati@unsil.ac.id

ABSTRACT

Land is the main asset of farming which tends to be narrower so that it affects the production system and decreases farm income. Therefore we need a farming system to optimize land use through polyculture farming. This study aims to determine the pattern of polyculture and commodity choices for land optimization, to identify sources of income as a survival strategy in narrow land, to determine the structure of income and its contribution to the income of farmers and farmer households and to determine the relationship between the structure of income, expenditure and welfare of farmer families.

The research method used quantitative methods through a survey in Cibalong District, Tasikmalaya Regency, West Java Province. Primary and secondary data were collected through observation and interviews with the help of questionnaires. The population of the study was the farmers who did the polyculture farming based on random results determined in the villages of Setiawaras and Parung totaling 5,938 people. The sample used cluster sampling technique as many as 167 farmers, who were analyzed descriptively and the analysisof the income structure and NTPRP. The research was conducted from July to September 2020. The results showed that the optimization of land with a polyculture pattern was carried out by farmers by cultivating different plant combinations, there were 92 polyculture cropping patterns from 167 farmers and almost all polycultural patterns cultivated tree / wood crops with other plants including the livestock business known as agroforestry. Polyculture farming is a multi-commodity and multi-product farming because crop yields vary and can be harvested simultaneously or sequentially to meet subsistence needs, social and commercial interests, including environmental services, so as to provide variability, continuity and stability of farmer income. Farming income (agriculture and livestock sub-sector) and non-farming contributed to farmers' income by 79.17% (40.99% agriculture sub-sector and 38.18% livestock) and 20.83%. Farmers' household income contributed 73.79% (agriculture sub-sector 38.00%, livestock 35.39%) and 19.31%. The income of family members contributes 7.30% to the household income of farmers. The average farmer family is in the prosperous category, NTPRTP (1.19> 1) which means that it has a surplus of income so that it is able to meet all its expenses, both for food and non-food consumption.

Keywords: Land optimization, Polyculture, income and expenditure structure, welfare

1. Introduction

The agricultural sector for Indonesia is one of the sectors that has an important contribution to national development, through its role in the formation of GDP, employment, and sources of public income, as well as its role in producing agricultural products for the supply of food, feed, industrial raw materials and exports.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

The 2015-2019 Ministry of Agriculture's Strategic Plan explains that the agricultural sector's average contribution to GDP for the 2010-2014 period reached 10.26% with a growth of around 3.90%. In the same period, the agricultural sector absorbed the largest workforce, in 2014 the agricultural sector absorbed around 35.76 million or around 30.2% of the total workforce. The trade balance grew positively at a rate of 4.2% per year. The Farmer Exchange Rate (NTP) increased very rapidly, from 101.78 in 2010 to 106.52 in 2014. In the same period, the number of poor people in rural areas who mostly engaged in the agricultural sector decreased at a rate of -3, 69% / year or decreased from around 19.93 million in 2010 to 17.14 million in 2014. In connection with this, in RPJMN stage-3 (2015-2019), the agricultural sector is still an important sector in national economic development. .

However, DwiPriyanto (2008) states that the land factor as the main asset of farming from year to year tends to decline as a result of population development, changes in regional spatial planning and so on. Lisson et., Al., (2010) also states that the characteristics of the farming system in Indonesia are dominated by small farmers with a narrow level of land ownership. WaniHadiUtomo (2012) explains that the limited land tenure by farmers, which is only about 0.3-0.5 ha / family on average, is something that is very difficult for farmers in Java to get a decent income and life from the land resources they own.

In this case, a farming system is needed that it can optimize land use in order to increase farmers' income to meet their family needs. This is related to what was stated by (Dashora and Hari Singh, 2014) that in the case of small and marginal farmers, the income obtained from their farming is almost insufficient to sustain the farming family. Utilization of land resources for agricultural development needs to pay attention to its potential, in order to obtain optimal results (Hidayat, A., 2009).

Murit (2010) explains that farmers with narrow land in rural areas simultaneously plant various types of plants on the same land. Rizal Zulfahmi, Safrida and Sofyan (2016) states that the system of cultivating plants in the same area of land in one year is planted with several types of plants either planted at the same time or at a slightly different time called polyculture.

The application of polyculture to meet needs and to increase incomes is highly recommended for farmers because this cropping pattern increases vegetation diversity which plays a major role in increasing optimal and sustainable land productivity (Nurindah 2006). Sopandi and Trikoesoemaningtyas (2011) state that polyculture is aimed at making the best use of the environment in order to obtain maximum production. Andayani (2005) explains that the polyculture farming pattern is one form of intelligence of farmers with narrow land in meeting household consumption needs. The success of farming, in an effort to meet household consumption needs, is ultimately determined by the farmers themselves through their cleverness in manipulating the land they own.

Farmers in Tasikmalaya Regency have practiced farming by simultaneously planting various types of plants on the same land. This farming has been carried out from generation to generation and is a legacy from our ancestors which is still being maintained. Over time, farmers have added several types of other crop commodities to the farm they cultivate. Mustafa (985) and Toledo (2002) explain that farming communities in rural West Java, in the past managing their farms were strongly based on local knowledge and trust. Furthermore, Iskandar (2012) states that they have in-depth local knowledge about various things related to their farming activities, including

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

knowledge about the types of plants and animals, climate, soil types and fertility, irrigation and others.

Taha and Mahdy (2004) state that polyculture has several advantages, they are producing more production of several types of plants, having less risk of failure than monocultures and with many combinations of plant types, and having biological stability that can be created against pests and diseases. In spite of having some advantages, polyculture also has disadvantages, such as competition for nutrients between plants and plant production that will inhibit each other.

In a polyculture system, according to Kadekoh (2007), too much population causes plants to compete in the absorption of nutrients, water and light. This competition causes the need for plants to produce to be disrupted as a result of disrupted production and branching processes. In connection with this, research was conducted on land optimization as a survival strategy for farmer families in narrow survival.

This research was conducted with the aim of identifying the pattern of polyculture and commodity choices for land optimization, identifying sources of income as a survival strategy in narrow land, observing the structure of income and its contribution to the income of farmers and farmer households and observing the relationship between the structure of income, expenditure and welfare of farmer families. The results of this study are expected to add insight and knowledge about how farmers carry out their farming activities with a choice of commodities that are tailored to the views of farmers from the aspects of local resources, economic, social and cultural aspects with the least risk.

2. Research Methods

The method used in this research is quantitative methods through surveys. The types of data required are primary and secondary data. Respondents were determined randomly (simple random sampling) by collecting farmers who do polyculture farming through observation and interviews with the help of questionnaires. The population of the study was the farmers who practiced polyculture farming in South Tasikmalaya Regency. Based on the random results, one sub-district was determined, namely Cibalong District in two selected villages namely Setiawaras Village and Parung Village with a total population of 4,369 people from Setiawaras Village and 1,569 people from Parung Village. Furthermore, 123 people from Setiawaras Village and 44 people from Parung Village were determined to make a total sample of 167 people.

Research problems regarding land optimization through polycultural cropping patterns carried out by farmers and a study of the choice of commodity determination and identification of sources of farmer income, farmer household income from farming and outside farming are analyzed with income structures using percentage analysis that comes from various sources of income, including from activities farming (on farm) and off farm (Todaro, 1999). From the total community income or total income, seen from the structure, it can be formulated as follows:

$$I = \sum_{i=1}^{n} (P_1) + \sum_{i=1}^{n} (NP_j)$$

Information:
I = Total Household Income of Farmers
Pi = Total Household Income from Farming

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

NPj = Total Household Income from Outside of Farming

The expenditure of household farmers is analyzed by the structure of household food expenditure/consumption. The larger the share of expenditure on food shows that household income is still concentrated on meeting basic needs. On the other hand, the larger share of the secondary sector (non-food) expenditure indicates a shift in the position of farmers from subsistence to commercial. In a sense, if the primary needs have been met, the excess income will be used to meet other needs, such as: education, health, and other secondary needs. The share of expenditure on food is calculated using the following formula:

$$PEP = \sum (PPn/\sum TE) \times 100\%$$

Information:
PEP = Share of expenditure on food (%)
VAT = Expenditures for food (IDR / year)
TE = Total household expenditure of farmers (Rp / year)

The concept of Farmer Household Income Exchange Rate (NTPRP) which is a comparison between total household income and total household expenditure is used to measure welfare (Simatupang, et., Al, 2007 in Sugiarto (2008) with the following formula:

$$NTPRP = Y/E$$
$$Y = Y_P + Y_{NP}$$
$$E = E_P + E_K$$

Information:
NTPRP = Exchange Rate of Rural Household Income
Y = Income
E = Expenditures
YP = Total income from agricultural business
YNP = Total income from non-agricultural businesses
EP = Total Expenditures for agricultural business
EK = total expenditure for non-agricultural businesses

3. Results and Discussion

3. 1. Identity of Respondents

The characteristics of farmers in this study were seen from the aspects of age, marital status, family dependents. It depends on formal education, counseling that is followed, and main job or side job. The age of the respondent farmers (91.62%) is in the productive age category (15-64 years) and the rest (9%) is in the range of unproductive age (> 64 years). In terms of their marital status, more than 90% are currently married and only about 1-2% are unmarried and widowers / widows. The number of family dependents is generally <3 people and between 3-5 people, the percentage of farmers with more than 5 dependents is only around 1-3%.

According to Mulyasa (2003), the education level of farmers is dominated by elementary education levels (> 50 percent), the development of thinking skills occurs with increasing age. This shows that the older a farmer is, the more experience he has in farming, which will increase the competence of farmers in farming. In connection with

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

this, efforts are needed to improve the ability of farmers through training and it turns out that most farmers have attended counseling.

The main job of farmers varies widely dominated by farmers who make their living as farmers and breeders. Farmers generally do not have side jobs, so the agricultural sector still plays an important role in supporting the community's economy. The average cultivated area is only 0.588 ha, with the status of land tenure generally owned (> 90 percent) so that farmers have full management rights over the land that they cultivate.

3.2. Polyculture Patterns for Optimizing Land and Choosing Commodities as Diversification Strategies for Farmers' Livelihoods.

The results of the tracing of the polyculture cropping patterns that were carried out showed that from 167 farmers studied (Appendix 1.) there were 92 polyculture cropping patterns (Appendix 2.) cultivated by farmers. There is a polyculture cropping pattern which is a combination of timber plants - livestock business; timber crops – plantation crops - livestock business; timbercrops – horticultural crops - livestock business; timbercrops - plantationcrops - horticulturalcrops - livestock business; and others (complete polyculture cropping patterns can be seen in Appendix 1).

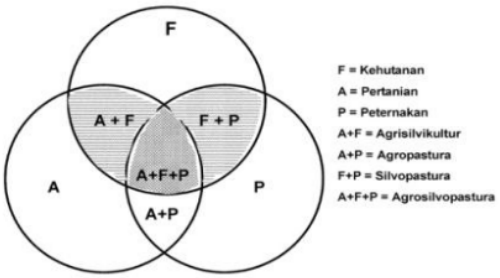

Figure 1.The Scope of Land Use Systems in Agroforestry (KurniatunHairiah, et al., 2003)

From the results of the tracing, it is known that in almost all polycultural patterns carried out by farmers, there are trees / wood as plants that are combined / cultivated with other crops including livestock business. Kurniatun Hairiah, Mustofa Agung Sardjono, Sambas Sabarnurdin (2003), planting various types of trees with or without annual crops (a year) on the same plot of land has long been practiced by farmers (including cultivators) in Indonesia. This practice is increasingly widespread and is a new branch of science in the field of agriculture and forestry that tries to combine the elements of plants and trees known as agroforestry.

Referring to this opinion, basically agroforestry consists of three main components, namely forestry, agriculture and livestock, where each component can actually stand on its own as a form of land use system (Figure 1). These systems are generally aimed at the production of a specific commodity or group of similar products. The combination of these three components produces several possible forms of combination, namely Agrisilviculture (a combination of forestry and agricultural components, Agropastura (a combination of agriculture with livestock), Silvopastura (a

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

combination of forestry with animal husbandry), Agrosilvopastura (a combination of agriculture with forestry and animal husbandry). Agroforestry includes Agrisilvikutur, Silvopastura and Agrosilvopastura, while agropasture is not included as agroforestry, because the forestry component or trees are not found in combination.

The types of agricultural crop commodities cultivated by farmers vary widely, which allows the use of products to be very diverse. Products produced are not only used to meet subsistence needs, but are also used for social or communal and commercial purposes, including environmental services. Plantation crops that are cultivated by many farmers are coconut, cocoa, coffee, cardamom, vanilla, kapol, cloves and pepper. Timber plants planted among the plantation crops are teak, mahogany, manglid and chords, while the seasonal plants are rice, chilies, and cassava.

From the results of further analysis, it was found that there were farmers who cultivated up to 10 types of commodity crops per area of land cultivated. Based on the type of agricultural crop commodities planted, it is known that farmers are working on at least 3 agricultural crop commodities (2 percent), 4 commodities (21 percent), 5 commodities (47 percent), 6 commodities (11 percent), 7 commodities (10 percent) , 8 commodities (6 percent), 9 commodities (2 percent) and even 10 commodities (1 percent) on the same stretch of land.

The agroforestry system has an important function for the ecology and socio-economic culture of the community because this agroforestry system produces various crops to meet the daily needs of the family (subsistence economy), and functions to protect the land from erosion, wildlife habitat, a source of germplasm. , produces oxygen and absorbs polluting gases such as CO2, and is adaptive to changes in climate anomalies, such as drought and floods (Van Noordwijk, et al. 2015).

One of the specific characteristics of dry land farming is the management of land resources by farmers. Dry land farmers generally manage their agricultural land with efficient land use and management practices in an effort to ensure economic viability, household food security, and reduce the risk of crop failure and mitigate climate change. From a household economic perspective, the choice of land use is influenced by farmer rationality (Krusemen et al, (2006) in Joko Mariyanto, et al., (2015).

The management of dry land agro-ecosystems is seen as part of the management of natural resource ecosystems by farmer communities who occupy the area where they live. Farming communities plant agricultural land with the aim of fulfilling the needs of their families as part of the management of dry land agro-ecosystems in their area. The commodities cultivated are of course adapted to local conditions and economic benefits, including marketing. In sustainable agricultural development, the management of dry land agro-ecosystems can be seen as an effort to restore and renew renewable resources in the area. Utilizing dry land resources for sustainable agriculture requires an environmental approach and follows environmental preservation principles.

3.3. Identification of Income Sources as a Strategy for Diversifying the Sources of Livelihood for Farmers and Families

Polyculture farming that is occupied by farmers is a multi-commodity and multi-product farming because it works on various combinations of plant commodities, including wood (chord, albasiah, teak, mahogany), plantation crops (coconut, cocoa, coffee, cloves, pepper, etc.), horticultural crops (jackfruit, durian, rambutan, banana) as well as food crops (rice, cassava) and livestock businesses (chickens, sheep, goats, cows). Therefore, this business has unique characteristics in terms of type of product, time to obtain products and orientation of product use, including product prices.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

This farming pattern can provide benefits through more efficient and sustainable use of resources because the crop yields are more varied and can be harvested simultaneously or sequentially. This cropping pattern also provides variability, continuity and income stability for farmers because it allows the spread of activities throughout the year with different harvest times ranging from daily, weekly, monthly, and annual.

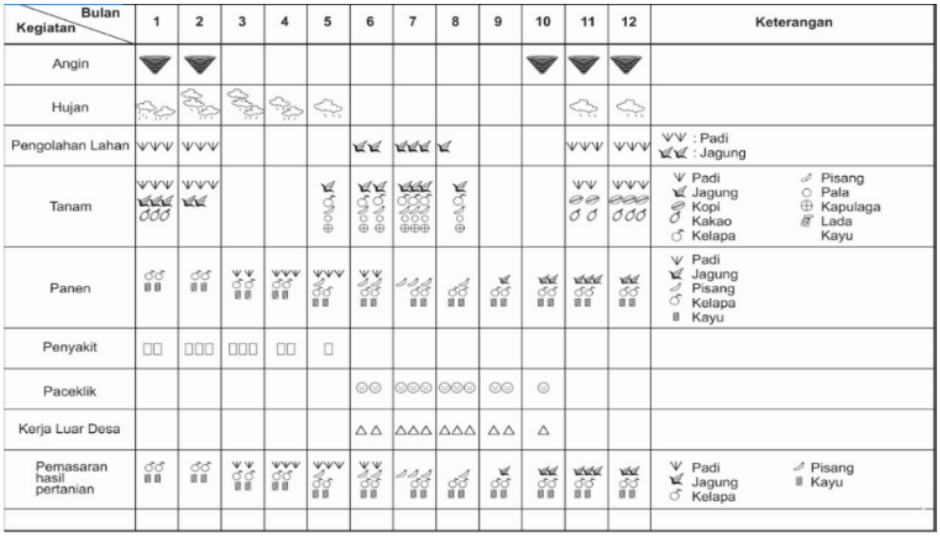

Figure 2: Season Calendar

The harvest of sugar palm is carried out every day, coconut plants every month, rice plants take place from March to May, durian plants from December to January-March with the peak of the harvest in February. Banana crops can be harvested from May to August with peak production in June and July followed by mangosteen harvest in September to December. Timber plants and livestock are sold when there are urgent needs, such as meeting the school needs of the farmers' children, celebrations and death warnings. In detail, the activities / activities of polyculture farm management carried out by farmers can be seen in the seasonal calendar (Figure 2).

Polyculture farming can increase the effectiveness of farming so that it is more efficient due to the use of land under tree stands that have high canopy such as coconut trees / other hard plants, resulting in land use efficiency. In the cocoa-banana-coconut polyculture, cacao and banana plants which have a lower canopy grow under coconut stands with a higher canopy. Meanwhile, Abdurahman and Mulyani (2003) explained that most (about 80 percent) of the land under coconut trees or between coconut plantations has not been utilized. Planting with a polyculture cropping pattern does not have a negative effect on coconut plants, even coconut production tends to increase if intercropping is managed properly.

3.4. Income structure and its contribution to farmer and family income

In an effort to meet the needs of their families, apart from farming, farmers also get income from outside of farming, including income from outside the agricultural sector. This is in accordance with the opinion of Dian (2014) in Asa Alfrida and TrisnaInsan Noor (2018) which states that the sources of household income can be

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

grouped into three sources, namely: 1) income from farming (on farm), 2) income from activities off-farm agriculture, 3) income from activities outside the agricultural sector (non-farm).

Therefore, the income structure of the farmer family basically shows the dynamics of the activities of all members of the farming family in their daily life, both in activities in the agricultural sector and outside the agricultural sector in an effort to meet the needs of their families. According to Nurmanaf (1989), low levels of income require household members to work or try to be more active to make ends meet. The income structure of the farmer family shows the main source of family income and how much each subsector of the economy contributes to the total income of the farmer family (Nurmanaf, (2006): Sudana, (2007): and TrisnaInsan Noor, (2011).

The income of the farmer family in the research location is not only obtained from the income of the farmer as the head of the family but also from the income of family members, in this case the income from the wife and contributions from the farmer's children. Farmers and their family members get income from various sources of income, namely income from farming (agriculture subsector and livestock subsector) as well as income from the outside farming sector and income from family members who contribute to the income of the farmer family.

In an effort to meet the needs of their families, apart from doing business in agriculture, farmers also do business outside the agricultural sector. This is in line with the results of research by Koestiono, (2004); and Barokah, Umi. et al (2015), which states that in general, farmers to meet the needs of their families do a combination of income from farming and outside farming, including outside the agricultural sector.

This is related to the business in the agricultural sector which is often faced with risks and uncertainties such as drought, crop failure, price fluctuations and others. In an effort to reduce this risk, small land farmers, try to optimize their farming by implementing a double income strategy, namely carrying out poly-culture farming and farming as well as by having additional jobs outside the agricultural sector and involving family members to increase their household income.

From the results of the analysis as listed in Table 1, it is known that farmers' income is not only sourced from the agricultural sub-sector (polyculture) but also from the livestock sub-sector and the non-agricultural sector. In addition, farmer households also receive a source of income from family members.

Table1.: Sources of Income for Farmers and Families

No	Source of Income	Total (Rp)	%*	%**
1.	Total Household Income from Farming:	11.543.663,00	79,17	73,39
	a) Income from Agriculture Subsector / year	5.976.886,00	40,99	38,00
	b) Income from the Animal Husbandry Subsector / year	5.566.777,00	38,18	35,39
2.	Income from the sector outside the farm year	3.037.227,00	20,83	19,31
3.	Total Farmers' Income / year (1) + (2)	14.580.890,00	100,00	92,70
4.	Family Member Income / year	1.148.935,00		7,30

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

5.	Total Household Income from outside the farm / year (2) + (4)	4.186.162,00	26,61
5.	Total Farmer Household Income / year	15.729.825,00	100,00

Note:% *: percentage of farmer's income,% **: percentage of farmer household income
Source: Primary data processed, 2018.

Farming income from the agricultural sector provides the largest contribution to farmers' income (40.99%) or 38% to farmer household income. The livestock sub-sector contributed 38.18% to farmers 'income or 35.39% to farmers' household income. The income of farmers is added from the income from the non-agricultural sector by 20.83% or the non-agricultural sector contributes 19.31% to the household income of farmers. Meanwhile, the income of family members contributed (7.30%) to the farmer family income.

Table 1 shows that the agricultural sector contributes 73.36% to farmer family income, far greater than the non-agricultural contribution (19.31%). This shows that farmers in the study locations still rely on agriculture as their main source of income in the midst of a shift in labor from the agricultural sector to other sectors, meaning that economic transformation in rural areas still places the agricultural sector as a sector that plays an important role.

3.5. The Linkage of Income Structure and Expenditure Structure and Family Welfare of Farmers

The analysis of the structure of household farmer expenditures is carried out to obtain an overview of how farmers and their families allocate their income to meet household needs. The expenditure structure of farmer families is seen from two approaches, namely from total expenditure which is the share of food expenditure to total expenditure including farming costs (food consumption, non-food and farming costs) and to total expenditure for consumption only (food and non-food).

Table2 : Income Structure, Expenditures and Farmer Welfare

Num	Description	Cibalong District
A	Farmers Household Income	15.729.825,00
	1. Farming	11.543.663,00
	2. Outside farming	3.037.227,00
	3. Income of family members	1.148.935,00
B	Family expenses	
1	Production / farming costs	1.609.341,00
2	Consumption	12.254.452,00
	Food	5.694.718,00
	Non Food	6.559.734,00

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

3	Total Expenses	13.863.794,00
4	Income Exchange Rate (NTPRTP) Against:	
	1. Production / farming costs	9,06
	2. Food Consumption	2,56
	3. Non Food Consumption	2,22
	4. Total Consumption	1,19
	5. Total Expenses	1,19

Furthermore, the share of expenditure on food is used as an indicator of the success of rural development. The larger the share of expenditure on food shows that household income is still concentrated on meeting basic needs. On the other hand, the larger the share of non-food sector expenditure indicates a shift in the position of farmers from subsistence to commercial. That is, if basic needs have been met, the excess income is allocated to meet other needs, for example education, health and other needs.

From Table 2 it can be seen that on average, farmer families are categorized as prosperous families, because the NTPRTP value> 1 is 1.19. This means that the farmer family has a surplus of income so that it can meet all its expenses, both for food and non-food consumption, as well as for production / farming costs. Rizal Zulfahmni, et al., (2016) explained that the polyculture cropping pattern is one of the right ways of farming to increase farmers' income so that their daily needs can be met.

Meanwhile, when comparing NTPRTP to total consumption (1.19) and to production costs (9.06), it shows that farmer households spend more to meet consumption needs compared to polyculture farming production costs. This is because the farmer family's expenses for polyculture farming costs are only spent according to their needs, depending on the production process of the plant, while the consumption needs of both food and non-food must be met every day.

Furthermore, NTPRP for food consumption (2.56) and non-food consumption (2.22) shows that NTPRP for food consumption is greater than NTPRP for non-food consumption. This means that UTPPT farming families prioritize food consumption over non-food consumption. This is because farmer families can adjust their food needs according to the available budget.

4.Conclusion dan Suggestion

4.1. Conclusion

From the results of the discussion, several conclusions can be drawn as follows:

1) Optimization of land with a polyculture pattern is carried out by farmers by cultivating different plant combinations, it is known that there are 92 polyculture cropping patterns cultivated from the 167 farmers studied and almost all polyculture patterns cultivate tree / wood crops with other plants including livestock business known by the name agroforestry.
2) Polyculture farming is a multi-commodity and multi-product farming because crop yields vary and can be harvested simultaneously or consecutively which are used to meet subsistence, social / communal and commercial interests

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3138 - 3149
Received 15 December 2020; Accepted 05 January 2021.

including environmental services so as to provide variability, continuity and stability of farmer income.

3) Farm income (agriculture and livestock sub-sector) and outside farming contributed 79.17% to farmers' income, respectively (40.99% agriculture sub-sector, 38.18% livestock) and 20.83%. The household income of farmers each contributed 73.39% (agriculture sub-sector 38%, livestock 35.39%) and 19.31%. The income of family members contributes 7.30% to the household income of farmers. On average, farmer families are in a prosperous category, the value of NTPRTP (1.19> 1) means that the farmer family has a surplus of income so that it is able to meet all its expenses, both for food and non-food consumption.

4.2. Suggestion

Optimization of land through a polyculture pattern guarantees variability, continuity and stability of income to meet subsistence needs, social needs and environmental services, so that small farmers can use them as a strategy to survive.

REFERENCES

1. Abdurahman andMulyani. 2003. Pemetaanlahanberpotensiuntupengembangankelapa. ISSN:2252-6188. JurnalLitbangPertanian. Lampung.
2. Hidayat. A. 2009. SumberdayaLahan Indonesia : Potensi, Permasalahan dan Strategi Pemanfaatannya. JurnalSumberdayaLahan. Vol. 3 No. 2. Desember 2009.
3. Asa Alfrida andTrisnaInsan Noor. 2018. AnalisisPendapatan dan Tingkat KesejahteraanRumahTanggaPetaniPadi Sawah Berdasarkan Luas Lahan. JurnalIlmiahMahasiswaAgroinfoGaluh. Volume 4 Nomor 3. Meio 2018.
4. Barokah, Umi, Masyhuri, Lestari RahayuWaluyati, andSlamet Hartono, 2015. PerilakuEkonomiRumahTanggaPetaniLahanKering di KabupatenKaranganyar. JSEP Vol 8 No. 12 uli 2015.
5. Dashora, L.N. and Hari Singh. 2014. I*ntegrated Farming System-Need of Today*. International Journal of Applied Life Sciences and Engineering (IJALSE), Vol 1 (1) 28-37 DepartemenPertanian, 2003.
6. DwiPriyanto, 2008. Model Usahatani Integrasi KakaoKambingDalamUpayaPeningkatanPendapatanPetani. BalaiPenelitianTernak. 2ogor.
7. Iskandar, J. 2012. Etnobiologi dan Pembangunan Berkelanjutan. AIPI Bandung, Puslitbang KPK LPPM dan MK63 Foundation, Bandung.
8. Joko Mariyanto, RiniDwiastuti andNuhfilHanani, 2015. Model 18onomiRumahTanggaPertanianLahanKering Di KabupatenKaranganyarProvinsiJawa Tengah. Habitat, Volume 26, No. 2, Agustus 2015, Hal. 108- 118.
9. Kadekoh. 2007. OptimalisasiPemanfaatanLahanKeringBerkelanjutandenganSistimPolikultur. Prosiding Seminar Nasional PengembanganInovasiLahan Marginal. Halaman 27 – 33.
10. Koestiono, 2004. AnalisisDampakAlternatifKebijakanTerhadapEkonomiRumahTanggaPetaniDalamUsahataniKonservasi. Disertasi. Program PascaSarjana Universitas Brawijaya. Malang.
11. KurniatunHairiah, Mustofa Agung Sardjono, Sambas Sabarnurdin. 2003. PengantarAgroforestri. BahanAjaranAgroforestri 1. World Agroforestry Center (ICRAF).

12. Lisson, S., N. MacLeod, C. McDonald, J. Corfield, B. Pangelly, L. Wirajaswadi, R. Rahman. S. Bahar, R. Padjung, N. Razak, K. Puspadi, Dahlanuddin, Y. Sutaryono, S. Saenong, T. Panjaitan, L. Hadiawati, A. Ash, and L. Brennan. 2010. A participatory, farming system approach to Improving Bali cattle production in the smallholder crop-livestock system of eastern Indonesia. Agricultural Systems 103: 486-497.
13. Mulyasa, 2002. KurikulumBerbasisKompetensi: Konsep, Karakteristik, dan Implementasi. Bandung (ID): RemajaRosdakarya.
14. Murit. 2010. Dari Doro Ke Raki : Ekonomi Gender dan TransformasiSosialPertanian Orang Galela. JurnalKomunitas 2 (2) (2010) : 125-134.
15. Mustapa, H. 1985 (1913).AdatistiadatSunda (Bab adat-adatOerangPrianganDjeungOerang Lian ti eta). Diterjemahkan oleh Sastrawijaya, M. Penerbit Alumni, Bandung.
16. rindah. 2006. PengelolaanAgroekosistemdalamPengendalian Hama. perespektif, Volume 5 Nomor 2, Desember 2006 : 78 – 85 ejurnal. Litbang.pertanian,go,id.
17. Nurmanaf, A.Rozany. 2006. PeranansektorLuarPertanianterhadapKesempatan dan Pendapatan di PedesaanBerbasisLahanKering. Jurnal SOCA vol 8. no3. November 2008.
18. RencanaStrategis Kementerian Pertanian (RenstraKementan) Tahun 2015-2019 EdisiRevisi Kementerian PertanianRepublik Indonesia. 2016.
19. Rizal Zulfahmi, Safrida, Sopyan. 2016. AnalisisPerbandinganPendapatanPetani Pola TanamMonokultur dan Polikultur di KecamatanMeureuduKabupatenPidie Jaya. JurnalIlmiahMahasiswaPertanianUnsyiah Volume 1 Nomor 1 November 2016.
20. Sopandi andTrikoesoemaningtyas. 2011. PengembanganTanaman Sela di Bawah gakanTanamanTahunan. IptekTanamanPangan 6(2) : 168 – 182.
21. Sudana, W., 2007. Laporan Akhir Kajian Pembangunan Wilayah Perdesaan.BBP2TP. dan Penelitian Dan PengembanganPertanian. Bogor.
22. Sugiarto. 2008. Analisa Tingkat KesejahteraanPetaniMenurut Pola Pendapatan dan Pengeluaran Di Perdesaan. Seminar Nasional Dinamika Pembangunan Pertanian dan Perdesaan; Tantangan dan PeluangBagiPeningkatanKesejahteraanPetani. Bogor. Pusat alisisSosialEkonomi dan Kebijak PertanianDepartemenPertanian.
23. Taha, E.M. and A.M. El-Mahdy. 2014. Land Equivalent Ratio as a Reference for Relative Crowding Coefficient and Aggressivity of Intercropped Plant Species. Middle East Journal of Agriculture Research, 3(3): 576-585
24. TrisnaInsan Noor. 2011. PengaruhAgroindustrialisasiPerberasanTerhadap Pembangunan PertanianBerdasarkanAgroekosistemLahan Sawah Irigasi di JawaBarat. Disertasi Program PascaSarjana, Universitas Padjadjaran.
25. Todaro,P,M, 1999, Pembangunan Ekonomi di Dunia Ketiga, di Terjemahkan oleh unandar,PenerbitErlangga, Jakarta.
26. Toledo, V.M, 2002. Ethnoecology: a conceptual framework for the study of indigenous knowledge of nature. In Stepp, J.R, Wyndham, F.S and Zarger, R.K (eds), *Ethnobiology and Biocultural*. The International Society of Ethnobiology, Georgia.
27. Van Noordwijk, M., P.A. Minang and K. Hiriah, 2015. Swidden Transitions. Bunch, R. 2015. Learning From Migratory Agriculture Around the World. In Cairns, M.F. (ed), *Shifting cultivation and environmental change: Indigenous People, Agriculture and Forest Conservation*. Routhledge, London and New York. Pp. 261-280.
28. WaniHadiUtomo. 2012.2012. Agroforestry : HidupLayakBerkesinambungan Pada LahanSempit. Pusat Studi Pembangunan, LP-IPB. Badan BimasKetahananPangan. DepartemenPertanian RI.

Land Optimization as a Surviving Strategy of Farmers Family in Narrow Lands

ORIGINALITY REPORT

15%	13%	4%	9%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Universitas Jambi Student Paper	4%
2	journal.uinsgd.ac.id Internet Source	2%
3	eudl.eu Internet Source	2%
4	jurnal.unigal.ac.id Internet Source	1%
5	Submitted to Universitas Siliwangi Student Paper	1%
6	cintaaammel.blogspot.com Internet Source	1%
7	Submitted to Universitas Sam Ratulangi Student Paper	1%
8	Submitted to Universitas Riau Student Paper	1%
9	research.chalmers.se	

	Internet Source	<1%
10	www.thegreencocoisland.org Internet Source	<1%
11	eprints.undip.ac.id Internet Source	<1%
12	www.iosrjournals.org Internet Source	<1%
13	www.icraf.cgiar.org Internet Source	<1%
14	R Priyadi, R Nuryati, Faqihuddin. "The Household Welfare Level of Integrated Plantation Polyculture Farmers", IOP Conference Series: Earth and Environmental Science, 2020 Publication	<1%
15	Submitted to Universitas Jenderal Soedirman Student Paper	<1%
16	ojs.unimal.ac.id Internet Source	<1%
17	M Palmolina, A Sudomo, D Diniyati. "Characteristic of agroforestry farmer as a source of cultural information: a case study in two villages in Java, Indonesia", IOP Conference Series: Earth and Environmental	<1%

Science, 2021
Publication

18	jurnal.unsil.ac.id Internet Source	<1%
19	"New Vistas in Agroforestry", Springer Science and Business Media LLC, 2004 Publication	<1%
20	Claudio David Togas, Grace O Tambani, Nurdin Jusuf. "ANALISIS KELAYAKAN USAHA BUDIDAYA IKAN SISTEM KARAMBA JARING TANCAP DI DESA TALIKURANKECAMATAN REMBOKEN KABUPATEN MINAHASA PROVINSI SULAWESI UTARA", AKULTURASI (Jurnal Ilmiah Agrobisnis Perikanan), 2016 Publication	<1%
21	adoc.tips Internet Source	<1%
22	es.scribd.com Internet Source	<1%
23	espace.library.uq.edu.au Internet Source	<1%
24	Partha Choudhuri. "Intercropping in cabbage (Brassica Oleracea L.var. capitata f.) for growth, yield, quality and sustainable soil health under foothills of Eastern himalayan region", Journal of Applied and Natural Science, 2016	<1%

Publication

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		